



LD Biopharma, Inc.
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<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human TPT1 Protein
Catalog Number: hRP-1329
Manufacturer: LD Biopharma, Inc.

Introduction

Human translationally controlled tumour protein (TPT1) is ubiquitously expressed in all eukaryotes and its expression is up-regulated in many tumours. Inhibition of TPT1 expression can induce tumor reversion. TPT1 plays a role in many cellular processes, for example, cell proliferation, growth, stresses, malignant transformation and apoptosis. The expression of TPT1 is up-regulated by growth stimuli and down-regulated when growth arrest is induced. TPT1 can protect cells from apoptosis by interacting with many proteins that regulate cell growth and apoptosis, such as Cdc25C, TSC22, p53, Mcl1, Bcl-xL and MDM2. TPT1 also controls cell growth and proliferation through interaction with Rheb, which regulates Rheb-GTPase activity. TCTP acts as a transcription factor in regulating expression of Oct4 and Nanog. TPT1 also exerts a role as IgE-dependent histamine-releasing factor (HRF), which plays a prominent role in chronic allergic disease processes. In mice, TPT1 knockout leads to early embryonic lethality. Recent data indicated that TPT1 is a novel regulator of HIF1 α through specifically binding with the β domain of VHL (E3 ubiquitin ligase) and competes with HIF1 α in ubiquitin-proteasome pathway.

Full-length length human TPT1 cDNA (2 – 172 aa, Isoform-II, derived from BC003352) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: TPT1 (HRF; P02; p23; TCTP)
Accession Number: NP_003286
Species: Human
Size: 50 μ g / Vial
Composition: 1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, DTT and Sucrose.



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Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Chen,K., et al., *TCTP increases stability of hypoxia-inducible factor 1alpha by interaction with and degradation of the tumour suppressor VHL*. Biol. Cell 105 (5), 208-218 (2013)

Zhang,J., et al., *Role of the translationally controlled tumor protein in DNA damage sensing and repair*. Proc. Natl. Acad. Sci. U.S.A. 109 (16), E926-E933 (2012)

Yarm,F.R. *Plk phosphorylation regulates the microtubule-stabilizing protein TCTP*. Mol. Cell. Biol. 22 (17), 6209-6221 (2002)

Applications

1. May be used for in vitro TPT1 protein mediated cell signaling pathway regulation study for embryonic or cancer cell with “ProFectin” based intracellular delivery of this protein.
2. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for TPT1 protein-protein interaction mapping.
4. As potential cancer diagnostic biomarker protein.
5. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFIIYRDLISHDEMFSDIYKIREIADGLCLEVEGKMV
SRTEGNIDDSLIGGNASAEQPEGEGTSTVITGVDIVMNHHLQETSFTKEAYKKYIKDYMKSIK
GKLEEQRPERVKPFMTGAAEQIKHILANFKNYQFFIGENMNPDGMVALLDYREDGVTPYMIFFK
DGLEMEKC